

This listing of the claims replaces all prior versions in the application.

Listing of Claims:

1. (Currently Amended) A multi-dose blister package having a plurality of blisters thereon and adapted for use in an inhaler, comprising:

a frame member having opposing top and bottom surfaces with a plurality of spaced apart gap spaces, a respective gap space configured to define at least a portion of a sidewall of a respective blister, wherein the frame gap spaces are circumferentially spaced apart through-apertures arranged in two substantially concentric rows;

a floor comprising a flexible material directly attached to the bottom surface of the frame member so that the floor extends under each gap space to define a bottom of each blister; and

a ceiling comprising a flexible material directly attached to the top surface of the frame member so that the ceiling extends above each gap space to define a top of each blister,

wherein the frame member has a thickness that is at least 10 times greater than a thickness of the floor and the ceiling, wherein each blister holds dry powder medicament and, when sealed, is devoid of any movable internal component therein other than the dry powder such that the dry powder directly contacts the frame sidewalls of a respective blister, and wherein the blister package has an annular shape with an open center.

2-3. (Canceled)

4. (Currently Amended) A multi-dose blister package according to Claim 1, wherein the dry powder in each blister is a bolus quantity of dry powder, ~~and~~ wherein the frame member is substantially rigid, and wherein the flexible floor layer is planar.

5. (Previously Presented) A multi-dose blister package according to Claim 1, wherein at least one of the ceiling and/or floor comprises first and second flexible layers of different materials, a selected one of the layers comprising a flexible piezoelectric material, and wherein, in operation, the piezoelectric material underlying a target blister is configured to

repeatedly flex generally upward and downward upon receipt of an electrical input.

6. (Original) A multi-dose blister package according to Claim 5, wherein the floor second layer comprises the piezoelectric material and is attached to a bottom of the floor first layer, the floor second layer further comprising a predetermined conductive pattern disposed over a first primary surface and a conductive material disposed over at least a portion of an opposing second primary surface.

7. (Original) A multi-dose blister package according to Claim 6, wherein the conductive material on the second primary surface of the second layer comprises a metallized coating disposed to cover substantially all of the second primary surface.

8. (Original) A multi-dose blister package according to Claim 6, wherein the predetermined conductive pattern on the second layer comprises a plurality of spaced apart conductive regions, each region sized and configured to substantially cover a surface area of a bottom portion of a respective blister underlying each gap space.

9. (Original) A multi-dose blister package according to Claim 8, wherein the predetermined conductive pattern further comprises at least one signal trace extending away from each region.

10. (Previously Presented) A multi-dose blister package according to Claim 8, wherein a signal trace for each blister travels toward a contact zone on the first primary surface of the second layer to allow selective electrical excitation of at least one target blister in operation.

11. (Previously Presented) A multi-dose blister package according to Claim 1, wherein the ceiling, frame member, and first layer of the floor have a circular shape when viewed from the top with respective substantially aligned center apertures that define a window to expose a portion of an upper surface of the second layer.

12. (Previously Presented) A multi-dose blister package according to Claim 1, further comprising a rotatable gear having circumferentially spaced apart gear teeth, the gear extending through the open center and attached to the frame member so that the blister package rotates with the gear.

13. (Original) A multi-dose blister package according to Claim 1, wherein neighboring pairs of blisters comprise a different dry powder held therein.

14. (Original) A multi-dose blister package according to Claim 1, wherein neighboring pairs of blisters are positioned closer to each other than non-neighboring blisters, and wherein each blister of a pair of neighboring blisters includes a different dry powder held therein.

15. (Original) A multi-dose blister package according to Claim 13, wherein the neighboring blisters are sized and configured to, in operation and in position in an inhaler, release their dry powders substantially concurrently to a user upon inhalation.

16. (Canceled)

17. (Original) A multi-dose blister package according to Claim 1, wherein the frame member is a laminated structure having increased structural rigidity relative to the floor and/or ceiling.

18. (Currently Amended) A multi-dose blister package according to Claim 1, wherein the frame member is a unitary polymer structure having increased structural rigidity relative to the floor and ceiling, and wherein the floor and ceiling layers have substantially the same thickness.

19. (Canceled)

20. (Previously Presented) A multi-dose blister package according to Claim 1, wherein the ceiling is further comprising a generally planar sealant layer sealably attached to the frame member.

21. (Original) A multi-dose blister package according to Claim 20, wherein the ceiling comprises a piezoelectric polymer.

22. (Previously Presented) A multi-dose blister package according to Claim 1, wherein the ceiling is moisture resistant and comprises foil and a polymer.

23. (Original) A multi-dose blister package according to Claim 7, wherein the second layer of the floor comprises a piezoelectric polymer.

24. (Original) A multi-dose blister package according to Claim 1, wherein opposing sidewalls of a respective gap space are inclined so that the sidewalls taper farther away from each other from a bottom to top portion thereof.

25. (Previously Presented) A multi-dose blister package according to Claim 1, wherein the sidewalls have substantially constant angles of inclination of between about 20-40 degrees from a bottom to a top portion thereof.

26. (Currently Amended) A multi-dose blister package according to Claim 7, further comprising:

a power source;

an input signal generating circuit that is in communication with the power source and is configured to provide electrical input to selectively flex the floor of a target blister; and

a non-transitory computer readable storage medium having computer readable program code in the medium, the computer readable program code being that is in communication with the signal generating circuit and is configured to define at least one

predetermined non-linear vibration input signal selected to represent *a priori* flow characteristic frequencies of the dry powder held in the blisters.

Claims 27-31 (Canceled).

32. (Currently Amended) A method for fabricating a multi-dose blister package having a plurality of blisters thereon and adapted for use in an inhaler, comprising:

- providing a generally rigid annular frame member having opposing top and bottom surfaces with a plurality of spaced apart gap spaces, a respective gap space configured to define at least a portion of a sidewall of a respective blister, wherein the frame gap spaces are circumferentially spaced apart through-apertures arranged in two substantially concentric rows;
- placing a meted quantity of dry powder in each of the blisters;
- sealing a flexible annular floor to the bottom surface of the frame member so that the floor extends under each gap space to define a bottom of each blister; and
- sealing a flexible annular ceiling to the top surface of the frame member to define a top of each blister,

wherein each blister holds a dose of dry powder medicament and, when sealed, is devoid of any movable internal component therein other than the dry powder such that the dry powder directly contacts the sidewalls of a respective blister, and wherein the blister package has an annular shape with an open center, and wherein the frame member has a thickness that is at least 10 times greater than a thickness of the floor and a thickness of the ceiling.

Claims 33-61 (Canceled).

62. (Currently Amended) A multi-dose dry powder package comprising:

- a polymeric annular frame body having upper and lower primary surfaces comprising a plurality of circumferentially spaced apart drug apertures having sidewalls extending between the upper and lower primary surfaces, wherein the apertures are through-apertures

arranged in two substantially concentric rows, and wherein the apertures have sidewalls that define sidewalls of a respective dose container;

an annular flexible floor sealably attached to the frame body lower primary surface and extending under the apertures;

an annular flexible ceiling sealably attached to the frame body upper primary surface and extending over the apertures; and

a metered quantity of dry powder medicament held in each of the drug apertures, wherein, when sealed, the drug apertures are devoid of any movable internal component therein other than the dry powder such that the dry powder directly contacts the sidewalls, and wherein the frame body has a thickness that is at least 10 times greater than a thickness of the floor and a thickness of the ceiling.

63-65. (Canceled)

66. (Currently Amended) A multi-dose blister package according to Claim 1, wherein the frame member comprises a molded polymer body with sidewalls that are about 2 mm deep, and wherein the floor is planar.

67. (Previously Presented) A multi-dose blister package according to Claim 1, wherein the frame member apertures are substantially circular when viewed from the top and bottom.

68. (Currently Amended) A method according to Claim 32, wherein the frame member apertures are configured with inclined surfaces at angles between about 15-60 degrees so that a bottom portion of a respective aperture has a lesser cross-sectional area than a top portion thereof, and wherein the floor is planar.

69. (Previously Presented) A method according to Claim 32, further comprising attaching an inhaler-mounting member to the frame member so that the mounting member resides upward through a center space of the annular ceiling, floor and frame.

70. (Currently Amended) A method according to Claim 62, wherein the frame member body has sidewalls with inclined surfaces having angles of inclination of between about 20-40 degrees, and wherein the floor is planar.

71. (Previously Presented) A method according to Claim 32, wherein the sidewalls of the frame member gap spaces are about 2 mm long.

72. (New) A multi-dose package having a plurality of dry powder doses therein and adapted for use in an inhaler, comprising:

a center annular substantially rigid polymeric frame member having opposing top and bottom planar surfaces with a plurality of spaced apart apertures extending therethrough, the frame member having downwardly extending tapered sidewalls associated with each aperture, wherein the frame member apertures are circumferentially spaced apart in two substantially concentric rows;

a planar annular flexible floor directly sealably attached to the bottom surface of the frame member so that the floor extends under each aperture; and

an annular flexible ceiling directly sealably attached to the top surface of the frame member so that the ceiling extends above each aperture,

wherein the frame member has a thickness that is at least 15 times greater than a thickness of the floor and a thickness of the ceiling, wherein each dose container holds dry powder medicament and, when sealed, is devoid of any movable internal component therein other than the dry powder such that the dry powder directly contacts the frame sidewalls of a respective aperture, and wherein the multi-dose package has an annular shape with an open center.